

WHAT IS CLAIMED IS:

1. A propeller shaft assembly, comprising: at least one shock absorbing section that couples an outer shaft and an inner shaft that are mutually spline-engaged to be retractable with impact loads,
5 wherein the shock absorbing section is arranged and constructed such that a supporting member is press-fit into an inner-diameter portion of the outer shaft, and an end face of the inner shaft is disposed in contact with the supporting member in a direction of retraction with respect to the outer shaft.
10
2. A propeller shaft assembly according to claim 1, wherein:
in the outer shaft, a splined portion is smaller in diameter than a press-fit inner diameter portion provided for the supporting member, a stepped portion is provided between the press-fit inner diameter
15 portion and the splined portion; and
a stop ring fitted to the end face of the inner shaft is engaged with the stepped portion.
3. A propeller shaft assembly according to claim 1, wherein a
20 plurality of the shock absorbing sections are axially disposed in alignment.
4. A propeller shaft assembly according to claim 2, wherein a
25 plurality of the shock absorbing sections are axially disposed in alignment.
5. A propeller shaft assembly, comprising: at least one shock

absorbing section that couples an outer shaft and an inner shaft that are mutually spline-engaged to be retractable with impact loads, wherein the shock absorbing section is arranged and constructed such that a supporting member axially fitted to the inner shaft is press-fit
5 into an inner-diameter portion of the outer shaft.

6. A propeller shaft assembly according to claim 5, wherein:
the supporting member is formed of a plurality of divided collar portions; and
10 the individual divided collar portions are fitted into an annular groove provided on an outer periphery of the inner shaft.

7. A propeller shaft assembly according to claim 5, wherein a plurality of the shock absorbing sections are axially disposed in
15 alignment.

8. A propeller shaft assembly according to claim 6, wherein a plurality of the shock absorbing sections are axially disposed in
20 alignment.

9. A propeller shaft assembly, comprising: at least one shock absorbing section that couples an outer shaft and an inner shaft that are mutually spline-engaged to be retractable with impact loads, wherein:

25 in the shock absorbing section, a supporting member is press-fitted into an inner-diameter portion of the outer shaft;

in the outer shaft, a splined portion is smaller in diameter than

a press-fit inner diameter portion provided for the supporting member, a stepped portion is provided between the press-fit inner diameter portion and the splined portion; and

5 a stop ring fitted to an end face of the inner shaft is press-held by a pressing portion of the supporting member to the stepped portion.

10 10. A propeller shaft assembly according to claim 9, wherein a plurality of the shock absorbing sections are axially disposed in alignment.

10

11. A propeller shaft assembly, comprising: at least one shock absorbing section that couples an outer shaft and an inner shaft that are mutually spline-engaged to be retractable with impact loads, wherein:

15 a plurality of the shock absorbing sections are axially disposed in alignment; and

between mutually adjacent shock absorbing sections, when an outer shaft or an inner shaft of at least the one shock absorbing section retracts, a free-fit preparation portion enables free fitting so that the
20 outer shaft or the inner shaft of the one shock absorbing section axially laps relatively with an outer shaft or an inner shaft of the other shock absorbing section, the free-fit preparation portion being preliminarily provided in the outer shaft or the inner shaft of the other shock absorbing section.

25

12. A propeller shaft assembly according to claim 11, comprising: the mutually adjacent shock absorbing sections provided to individual

two ends of the commonly used outer shaft, the one of the shock absorbing sections coupling the one inner shaft with the outer shaft, and the other of the shock absorbing sections coupling the other inner shaft with the outer shaft, wherein

- 5 a hollow portion of the other inner shaft is used as a free-fit preparation portion that enables the one inner shaft to be freely fitted.